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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/501,704   | 02/18/2005  | Ma Qian              | RR-565 PCT/US       | 5042             |
| 20427  | 7590        | 10/18/2007           | EXAMINER            |                  |
| RODMAN RODMAN<br>10 STEWART PLACE<br>SUITE 2CE<br>WHITE PLAINS, NY 10603 |             |                      | YANG, JIE           |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1793                |                  |
|  |             |                      | MAIL DATE           | DELIVERY MODE    |
|  |             |                      | 10/18/2007          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/501,704

Applicant(s)

QIAN ET AL.

Examiner

Jie Yang

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/05/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16,17 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 16,17 and 20-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 07/16/04, 09/19/06, 03/13/07.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Applicant's election with traverse of "Group I—Claims 16-17 and 20-25, in the reply filed on 10/05/2007 is acknowledged. The traversal is on the ground(s) that Group I and Group II will overlap a search. This is not found persuasive because claims 16-17 and 20-25 are drawn to a product of magnesium-zirconium alloy; however, claims 19 are drawn to a method for making magnesium alloy. A materially different process can make the claimed product. Therefore, examining group I does not require searching the classes required for examining group II.

The requirement is still deemed proper and is therefore made FINAL.

Claims 17 and 20 are amended from original claims, claim 19 is withdrawn from consideration as being directed to a non-elected group, and Claims 16-17 and 20-25 are pending for examination.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16, 17, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 734,614, thereafter 'GB614, in view of Christodoulou et al (US 4,751,048, thereafter '048).

Regarding claims 16, 17, 21, and 22, 'GB614 teaches a substantially chloride-free master alloy containing magnesium and zirconium (claim 1 of 'GB614). Because chloride is one of halide, 'GB614 teaches the limitation of "substantial absence of halide inclusions" recited in the instant claim 16. 'GB614 teaches magnesium-zirconium master alloy containing not less than 20% of finely divided zirconium (claim 15 of 'GB614), which is within the claimed zirconium range as recited in the instant claims 21 and 22. Because 'GB teaches the zirconium solubility in magnesium is less than 1%wt. (Page2, line 39-61 of 'GB614), the master alloy containing magnesium and from 5 to 40% zirconium in finely divided condition will inherently include dissolved zirconium and zirconium particles. SEE MPEP 2112 III & IV.

GB614 does not explicitly state the magnesium-zirconium master alloy "wherein 90% of the zirconium particles are size

less than 5 $\mu$ m (Claim 16 of the instant invention) or 3 $\mu$ m (claim 17 of the instant invention)". However, the size of zirconium particle is a result-effective variable in term of particle distribution and uniformity <sup>in the alloy</sup> which is evidenced by '048. '048 teaches a method for the introduction of in-situ precipitated second phase materials, such as ceramic or intermetallic particles in a metal matrix, to a host metal (Abstract of '048). '048 teaches the particle size could vary from 0.01 to 5 $\mu$ m according to different alloys and temperatures (Table 1, examples 1-29 of '048). Therefore, it would have been obvious to one skilled in the art to have optimized the zirconium particle size, for example, 90% of zirconium particles are size less than 5 $\mu$ m even 3 $\mu$ m as recited in the instant claims in the process of 'GB614 in view of '048 in order to retain fine grain size, particle size for resultant superior physical properties of material during recasting and re-melting process (C01.31, line 21-26 of '048). See MPEP 2144.05 II.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 734,614, thereafter 'GB614.

### **2113 Product-by-Process Claims [R-1]**

**PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS**

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

Claims 20, 23-25 are product-by-process claims, in the absence of the evidence that the process limitations of the instant invention would materially change the properties or structure of the magnesium alloy containing zirconium, the magnesium alloy of 'GB614 would be similar to the claimed magnesium alloy. SEE MPEP 2113. Therefore, a 103 rejection based on 'GB614 would be proper.

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Regarding claim 20, 'GB614 teaches the magnesium-zirconium master alloy could be served as a source of zirconium for a magnesium or magnesium alloy melt to make a magnesium alloy (page 1, line 11-59 of 'GB614).

Regarding claims 23-25, the claimed magnesium-zirconium master alloy has been addressed in the rejection for claims 16, 17, 21, and 22. 'GB614 teaches a master alloy containing magnesium and from 5 to 40% zirconium in finely divided condition and substantially free from chloride.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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